

### Reasons for Allowance

1. An examiner's amendment to the record appears below. This was made to fully bring out in the independent claims the details of the fully computed two dimensional projection, the two dimensional visualization and its distinctions, the rotating between the different projection planes, and the processing time efficiency with associated projection of the three dimensional model. Also the Examiner's amendment remedies a 101 issue regarding claim 42. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Please amend the claims as follows:

22. (currently amended) A computer system operation method for displaying a computer-generated two-dimensional projection of a three-dimensional model of an object on a display in a desired plane, the method comprising the steps of:  
converting the computer-generated three-dimensional model of the object to a computer-generated two-dimensional visualization of the object, said two-dimensional visualization of the object being processed by said computer without generating full drafting data, said computer-generated three-dimensional model of the object being in one of a plurality of projection planes and said computer-generated two-dimensional visualization of the object being in a first selected projection plane from said plurality of selection planes;

receiving a second selected projection plane for said two-dimensional visualization, wherein said second selected projection plane is different from said first selected projection plane;

rotating said two-dimensional visualization in order to display said two-dimensional visualization in said second selected projection plane;

displaying said two-dimensional visualization in said second selected projection plane; and

generating the a fully computed two-dimensional projection of said three-dimensional model in said second selected projection plane after said two-dimensional visualization in said second selected projection plane has been displayed, said fully computed projection of said three-dimensional model being processed by said computer generating full drafting data, wherein computer processing time of said two-dimensional visualization of the object being processed without generating full drafting data is substantially reduced with respect to computer processing time of said fully computed projection of said three-dimensional model being processed generating full drafting data, thereby substantially improving efficiency in displaying said computer-generated two-dimensional projection of a three-dimensional model of an object on a display in a desired plane.

23. (previously presented) The method of claim 22 wherein the display of the two dimensional visualization is limited to pixel data.

Claims - 24- 25 (canceled)

26. (currently amended) The method of claim 22, wherein said steps of receiving a second selected projection plane and

displaying said two-dimensional visualization in said second selected projection plane are iteratively repeated, and wherein the step of generating the fully computed two-dimensional projection of said three-dimensional model of the object in said second selected projection plane includes the step of:

receiving an approval for said second selected projection plane; and  
displaying said fully computed two-dimensional projection of said three-dimensional model in said second selected projection plane after receiving said approval.

27. (previously presented) The method of claim 22, wherein the step of receiving a second selected projection plane includes the step of:

providing a manipulator tool button for selecting said second projection plane.

28. (previously presented) The method of claim 27, wherein said manipulator tool includes a plurality of quadrants, each of said plurality of quadrants representing a predetermined number of degrees of rotation in a predetermined direction around an orthogonal axis, wherein the step of receiving a second projection plane includes the step of:

receiving a selected one of said plurality of quadrants; and  
rotating said first selected projection plane said predetermined number of degrees and in said predetermined direction around said orthogonal axis associated with said selected quadrant.

29. (previously presented) The method of claim 28, wherein said manipulator tool includes a programmable interactive button and wherein the step of displaying said two-dimensional visualization in said second selected projection plane includes the step of:

displaying said two-dimensional visualization in said second selected projection plane in response to an activation of the programmable interactive button.

30. (currently amended) A projection plane manipulator tool for manipulating a projection plane wherein a computer-generated three-dimensional model of an object is converted to a two-dimensional visualization of the object, said two-dimensional

visualization of the object being processed by said computer without generating full drafting data, and wherein:

said two-dimensional visualization of the object is displayed on a computer screen in a first selected projection plane, said first selected projection plane associated with said two-dimensional visualization being manipulated to a second selected projection plane, wherein said second selected projection plane is different from said first selected projection plane;  
said two-dimensional visualization is rotated in order to display said two-dimensional visualization in said second selected projection plane; and wherein said three-dimensional model is thereafter projected in said second selected projection plane by generating a fully computed two-dimensional projection of said three-dimensional model, said fully computed projection of said three-dimensional model being processed by said computer generating full drafting data, and said projection plane manipulator tool comprising:  
a user interactive device tracking the circumference of a circle displayed on said computer screen, wherein selecting the interactive device and rotating it in a clockwise or counter-clockwise direction will cause said first projection plane to rotate about an axis which is perpendicular to the computer screen, and wherein  
computer processing time of said two-dimensional visualization of the object being processed without generating full drafting data is substantially reduced with respect to computer processing time of said fully computed projection of said three-dimensional model being processed generating full drafting data, thereby substantially improving efficiency in projecting said three-dimensional model in said second selected projection plane.

Claims - 31- 41 (canceled)

42. (currently amended) A computer readable storage medium having stored thereon computer ~~Computer~~ executable code stored on a computer-readable medium ~~for displaying a computer-generated two-dimensional projection of a three-dimensional~~

model of an object on a display in a desired plane, such that when said the code is executed by a computer, it causes the causing-a computer to take execute a number of steps comprising:

displaying a computer generated three-dimensional model of an object on a display in one of a plurality of projection planes;  
converting the three-dimensional model of said object to a computer generated two-dimensional visualization of the object, said two-dimensional visualization of the object being processed by said computer without generating full drafting data, wherein said computer generated two-dimensional visualization is in a first selected projection plane from said plurality of selection planes;  
receiving a second selected projection plane associated with said two-dimensional visualization; wherein said second selected projection plane is different from said first selected projection plane;  
rotating said two-dimensional visualization in order to display said two-dimensional visualization in said second selected projection plane;  
displaying said two-dimensional visualization in said second selected projection plane; and  
generating ~~the~~ a fully computed two-dimensional projection of said three-dimensional model in said second selected projection plane after said two-dimensional visualization in said second selected projection plane has been displayed, said fully computed projection of said three-dimensional model being processed by said computer generating full drafting data, wherein  
computer processing time of said two-dimensional visualization of the object being processed without generating full drafting data is substantially reduced with respect to computer processing time of said fully computed projection of said three-dimensional model being processed generating full drafting data, thereby substantially improving efficiency in displaying said computer-generated two-dimensional projection of a three-dimensional model of an object on a display in a desired plane.

43. (previously presented) The projection plane manipulator tool of claim 30 wherein selecting the interactive device is accomplished by clicking a pointing device controlling a cursor while the cursor is positioned over the interactive device.
44. (previously presented) The projection plane manipulator tool of claim 30 wherein the user interactive device is incorporated into a graphical manipulator software tool

Authorization for this examiner's amendment was given in a telephone interview with Ms. Isabel Cantollops on 8/17/09.

2. The following is an examiner's statement of reasons for allowance: The Examiner's Amendment 8/17/09 places the application into condition for allowance by incorporating into the independent claims the details of the fully computed two dimensional projection, the two dimensional visualization and its distinctions, the rotating between the different projection planes, and the processing time efficiency with associated projection of the three dimensional model. Also, it remedies a 101 issue regarding claim 42 by amending to recite a "storage medium." It is noted that claim 30 is statutory especially as it recites the display screen. Claim 22 is also statutory. Independent claims (22 - method, 30 – manipulator tool, 42—storage medium) are not set forth in the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven P. Sax whose telephone number is (571) 272-4072. The examiner can normally be reached on Monday thru Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dennis Chow can be reached on (571) 272-7767. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P Sax/  
Primary Examiner, Art Unit 2174

\*\*\*